

Patent claims

1. A sample holder for installation in a reaction chamber (22) intended for a sample fluid, with a
5 holder plate (11) made of an electrically insulating material, on one side of which electrically conductive receiving regions (17) are located for sample constituents of the sample fluid that are to be detected, the receiving regions
10 being assigned electrical contact locations (19), characterized in that the electrical contact locations (19) are located on the other side of the holder plate (11), facing away from the receiving regions (17), and the holder plate being provided
15 with apertures through which the electrical contact locations (19) are electrically connected to the receiving regions (17).
2. The sample holder as claimed in claim 1,
20 characterized in that inserts (15a, 15b, 15c) which bear the receiving regions (17) on their one side and are electrically connected to the electrical contact locations (19) with their other side are located in the apertures (12).
- 25 3. The sample holder as claimed in claim 2, characterized in that the inserts (15a, 15b, 15c) pass through the holder plate and form the electrical contact locations (19) on the other side
30 of the latter.
4. The sample holder as claimed in either of claims 2 and 3, characterized in that the inserts (15b, 15c) are convexly curved on their one side.
- 35 5. The sample holder as claimed in claim 4, characterized in that the inserts (15b) respectively have a single convexly curved surface

area, which extends in the manner of a spherical cap over the entire receiving region (17).

- 5 6. The sample holder as claimed in claim 4, characterized in that the inserts (15c) respectively have a multiplicity of convexly curved surface areas, which extend in the manner of facets over the entire receiving region (17).
- 10 7. The sample holder as claimed in one of claims 4 to 6, characterized in that the radius of curvature of the convexly curved surface areas is between 20 and 500 μm .
- 15 8. The sample holder as claimed in one of the preceding claims, characterized in that a reference electrode (20) is attached on one side of the holder plate (11).
- 20 9. A reactor for a sample fluid with a reaction chamber (22), in which a sample holder (23) in plate form is located, on one side of which electrically conductive receiving regions (17) for sample constituents of the sample fluid that are to
25 be detected are located, the receiving regions (17) being assigned electrical contact locations (19), characterized in that the sample holder (23) is exchangeably arranged in a sample holder compartment (24), which is located in the reaction
30 chamber (22) and has terminal contacts (30) for the electrical contact locations (19).
- 35 10. The reactor as claimed in claim 9, characterized in that a self-supporting electrode grid (33) aligned parallel to one side of the sample holder is arranged in the reaction chamber (22) as a reference electrode.

11. The reactor as claimed in either of claims 9 and 10, characterized in that a wall part (32) of the reaction chamber (22) is aligned parallel to one side of the sample holder, bearing the receiving regions (17), and on the wall part (32) counter electrodes (31) are respectively arranged opposite the receiving regions (17).
12. A method for producing a sample holder for installation in a reaction chamber (22) intended for a sample fluid, in which
- electrically conductive receiving regions (17) for sample constituents of the sample fluid that are to be detected are produced on one side of a holder plate (11) made of an electrically insulating material and
 - the receiving regions are assigned electrical contact locations (19) for electrical contacting,
- characterized in that
- apertures (12) are made in the holder plate,
 - inserts (15a, 15b, 15c) bearing the receiving regions (17) are formed in the apertures (12) and
 - the electrical contact locations (19) are produced on the other side of the holder plate (11), facing away from the receiving regions (17), and are connected to the inserts (15a, 15b, 15c).
13. The method as claimed in claim 12, characterized in that the apertures (12) are produced in the holder plate, which consists in particular of silicon, by an etching treatment.
14. The method as claimed in either of claims 12 and 13, characterized in that the inserts (15a, 15b, 15c) are produced in the apertures (12) by injection molding, in particular of polycarbonate containing graphite, the apertures (12) serving as part of the injection mold.